CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94 - 094 **NPDES PERMIT NO. CA0038091**

WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF BENICIA,
BENICIA, SOLANO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. The City of Benicia, hereinafter called the discharger, submitted a Report of Waste Discharge dated July 15, 1992 for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

2. This discharge is presently governed by Waste Discharge Requirements in Order No. 88-005, adopted by the Board on January 20, 1988.

3. The discharger owns and operates the Benicia Wastewater Treatment Plant, located at 614 East Fifth Street, Benicia, Solano County, California. The plant provides secondary level treatment for combined domestic, commercial and industrial wastewater from sources within the City of Benicia, which currently has a population of about 25,000. Treatment process consists of detriter grit chambers, primary clarifiers, rotating biological contactors (RBCs), secondary clarifiers, chlorination and dechlorination. Sludge is thickened via gravity thickener, anaerobically digested, and dewatered by a belt filter press before it is disposed of offsite at a permitted landfill. The plant also includes flow equalization and industrial holding basins that provide additional safeguard to plant upsets during incidents of high flows or slug loadings of toxic waste. A treatment process diagram is included as Attachment A of this Order, and a location map is included as Attachment B.

4. In 1991, the discharger completed the first stage of a two-staged plant expansion by adding a third train of RBCs, a third secondary clarifier, a gravity sludge thickener, a second belt filter press, and other improvements necessary to improve efficiency and solids handling capability of the plant and to control odors from the plant. The first stage expansion increased the treatment plant dry weather flow design capacity from 3.0 million gallons per day (mgd) to 4.5 mgd. Over the five-year period of 1988 through 1992, the plant treated an average dry weather flow of approximately 2.3 mgd.

5. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a major discharge.

6. Treated effluent is discharged into Carquinez Strait, a water of the State and of the United States. The discharge is through a submerged deepwater outfall south of the treatment plant, off the north shore of Carquinez Strait, located at: Latitude 38° 02' 30" N and Longitude 122° 09' 03 " W. The outfall's diffuser is located 500 feet from shore at a water depth of 10 feet, and provides a minimum initial dilution of at least 10:1 at all times.

7. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan identifies beneficial uses and water quality objectives for surface and groundwaters in the region, as well as effluent limitations and discharge prohibitions intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

8. The beneficial uses identified in the Basin Plan for Carquinez Strait are as follows:

   - Navigation
   - Water Contact Recreation
   - Non-contact Water Recreation
   - Wildlife Habitat
   - Preservation of Rare and Endangered Species
   - Fish Migration
   - Fish Spawning
   - Estuarine Habitat
   - industrial Service Supply
   - Ocean Commercial and Sport Fishing

9. Effluent limitations in this permit are based on the Basin Plan, EPA water quality criteria (*Quality Criteria for Water*; EPA 440/5-86-001, 1986; Gold Book), applicable Federal Regulations (40 CFR Parts 122 and 131), and Best Professional Judgement. Carquinez Strait, the discharge receiving water, is an estuarine water with salinity that is generally marine in character. Therefore, effluent limitations for the discharge are based on marine water quality objectives.

10. The effluent limit for copper in this permit is based on a water quality objective for copper of 4.9 µg/L and the Board's study to develop a site-specific water quality objective for copper for San Francisco Bay, based on best professional judgement. This study and associated staff analysis are described in the September 25, 1992 Board staff report entitled "Revised Report on Proposed Amendment to Establish a Site Specific Objective for Copper for San Francisco Bay."

11. It is the Board's intention to work towards controlling copper loadings to the San Francisco Bay-Delta Estuary, such as through a regional copper wasteload allocation. This permit may be amended in the future to include specific copper mass loading limitations and loading reductions in accordance with an approved copper wasteload allocation.

12. Existing effluent data for polynuclear aromatic hydrocarbons (PAHs) do not include sufficiently low detection limits to allow determination of compliance with the new effluent limit for PAHs. Due to uncertainty as to whether the discharger can comply with the new limit, this Order includes an interim limit for PAHs. The interim limit shall apply until this permit is reissued, at which time application of the then-current effluent limitation will be used to regulate PAHs.

13. The 1986 Basin Plan initiated the Effluent Toxicity Characterization Program (ETCP) in which dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations.

    The discharger is currently participating in the ETCP and has completed the screening phase study of the ETCP which identifies species that are sensitive to the toxicity testing. The discharger is conducting variability phase study for its plant effluent and ambient receiving waters. If consistent chronic toxicity is identified in the plant effluent, the discharger will perform toxicity identification evaluations (TIE) as directed by the Executive Officer. This permit may be amended in the future to include chronic toxicity effluent limits and monitoring requirements.

14. The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16. This order provides for an increase in the volume and mass of pollutants discharged. The increase will not unreasonably affect present and anticipated beneficial uses of water given that the discharger will continue to comply with the effluent limitations and water quality control policies prescribed in the Basin Plan. The increase in the discharge allows wastewater utility service necessary to accommodate housing and economic expansion in the area, a benefit to the people of the State.

15. Federal Regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on November 19, 1990. The regulations [40 Code of Federal Regulations (CFR) Parts 122, 123, and 124] require specific categories of industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Available Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.

16. The storm water flows from the wastewater treatment facility process areas are directed to a holding pond where the storm water is contained and allowed to evaporate. These storm water flows constitute all industrial storm water at this facility and consequently this permit regulates all industrial storm water discharges at this facility.

17. The discharger submitted a Wet Weather Flow Management Plan (WWFMP) in December 1992 addressing the problems of excessive wet weather flows and overflows in the discharger's collection system caused by inflow/infiltration (I/I). The management plan includes a capital improvement program to complete major improvements over a ten-year period to correct identified I/I sources. The proposed approach to wet weather flow management is in accord with the Basin Plan's wet weather flow control strategy. The discharger is in the process of preparing an updated WWFMP and will implement the recommendations of the updated plan.

18. The discharger has implemented and is maintaining an U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and this Board's Order No. 89-179.

19. An Operations and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

20. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

21. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the discharge and have been provided an opportunity to submit their written views and recommendations.

22. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in the findings of this Order is prohibited.

2. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

3. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant, is prohibited.

4. The average dry weather flow discharge shall not exceed 4.5 mgd. The average dry weather flow shall be determined over three consecutive dry weather months each year.

5. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the State are prohibited.

B. EFFLUENT LIMITATIONS

The term "effluent" in the following limitations means the fully treated wastewater effluent from the discharger's wastewater treatment facility, as discharged to Carquinez Strait.

1. The effluent shall not exceed the following limits:

Constituent	Unit	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
a. Biochemical Oxygen Demand (BOD_5, 20 ° C)	mg/L	30	45	60	--
b. Total Suspended Solids (TSS)	mg/L	30	45	60	--
c. Oil & Grease	mg/L	10	--	20	--
d. Settleable Matter	ml/L-hr	0.1	--	--	0.2
e. Total Chlorine Residual[(1)]	mg/L	--	--	--	0.0

Footnote:
(1) Requirement defined as below the limit of detection in standard test methods.

2. pH: The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

3. Total Coliform Bacteria:

The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

a. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100ml; and
b. Any single sample shall not exceed 10,000 MPN/100ml.

4. 85 Percent Removal, BOD_5 and TSS:

The arithmetic mean of the biochemical oxygen demand (BOD_5, 20°C) and total suspended solids (TSS) values, by weight, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period.

5. Toxic Substances Effluent Limitations:

The effluent shall not exceed the following limits (1) (2):

All limits are in units of µg/L.

Constituent			Monthly Average (3)	Daily Average (3)	Monthly Average Interim Limit (3) (8)
a.	Arsenic	(5)		200	
b.	Cadmium	(5)		30	
c.	Chromium	(4) (5)		110	
d.	Copper			37	
e.	Lead	(5)		53	
f.	Mercury		0.21	1	
g.	Nickel	(5)		65	
h.	Cyanide	(6)		25	
i.	Selenium	(5)		50	
j.	Silver			23	
k.	Zinc	(5)		580	
l.	Phenol		500		
m.	PAHs	(7) (8)	<0.31>		1

Footnotes:

(1) These limits are based on marine water quality objectives. Compliance with these limits is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

(2) All analyses shall be performed using current USEPA methods, as specified in the "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", SW-846, Third Edition, or equivalent reference approved in writing by the Executive Officer. Method Detection Limits, Practical Quantitation Limits, and quantitative levels will be taken into account in determining compliance with effluent limitations.

(3) Limits apply to the average concentration of all samples collected during the averaging period (Daily - 24-hour period; Monthly - calendar month).

(4) The discharger may meet this limit as total chromium.

(5) Effluent limitation may be met as a four-day average. If compliance is to be determined based on a four-day average, then four separate 24-hour composite samples shall be obtained over four consecutive days, and the concentration results for each composite sample shall be reported, as well as the average of the four.

(6) The discharger may demonstrate compliance with this limitation by measurement of weak acid dissociable cyanide.

(7) PAHs (polynuclear aromatic hydrocarbons) shall mean all PAH constituents identified by EPA Method 610. For compliance monitoring, other approved test methods may be used, provided all EPA Method 610 PAH constituents are identified.

(8) The Monthly Average Interim Limit for PAHs (1 µg/L) shall apply to each separate PAH constituent. This Interim Limit shall apply until the next permit reissuance.

6. Whole Effluent Acute Toxicity

Representative samples of the effluent shall meet the following limits for acute toxicity:

The survival of organisms in undiluted effluent shall be:

a. an 11-sample median value of not less than 90 percent survival [1] ; and
b. an 11-sample 90th percentile value of not less than 70 percent survival [2] .

These acute toxicity limits are defined as follows:

(1) 11-sample median: A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests show less than 90 percent survival.

(2) 90th percentile: A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests show less than 70 percent survival.

If the discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of these effluent limits. In the event that ammonia in the effluent consistently causes toxicity, the Board may consider modifying these effluent limits if the discharger demonstrates that ammonia in the effluent is not impacting receiving water quality or beneficial uses. Antibacksliding will not apply to such a modification because these limits do not apply to ammonia toxicity.

(Note: Provision E.5. of this Order addresses compliance with this effluent limitation.)

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:

   a. Dissolved Oxygen — 5.0 mg/L, minimum

      (The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen levels.))

   b. Dissolved Sulfide — 0.1 mg/L, maximum

   c. pH — Variation from normal ambient pH by more than 0.5 pH units.

   d. Un-ionized Ammonia — 0.025 mg/L as N, annual median, and 0.16 mg/L as N, maximum .

   e. Nutrients — Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. SLUDGE MANAGEMENT PRACTICES

1. Sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

2. All sludge generated by the discharger must be disposed of in a municipal solid waste landfill, or in accordance with the requirements of 40 CFR Part 503. All the requirements in 40 CFR Part 503 are enforceable by the USEPA whether or not they are stated in an NPDES permit or other permit issued to the discharger.

3. Currently, all sludge generated by the discharger is disposed of in a municipal solid waste landfill. If the discharger desires to dispose of sludge by a different method, the discharger shall notify the Board and USEPA in writing before start-up of the alternative disposal practice.

4. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. The discharger's annual self-monitoring report shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.

5. Permanent on-site sludge storage or disposal activities are not authorized by this permit. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the discharger.

E. PROVISIONS

1. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 88-005. Order No. 88-005 is hereby rescinded.

2. The discharger shall comply with all sections of this Order immediately upon adoption.

3. Mass Emission Limits. Where concentration limitations in mg/l or µg/l are contained in this Permit, the following Mass Emission Limitations shall also apply:

   Mass Emission Limit in kg/day = (Concentration Limit in mg/L) x (Actual Flow in mgd averaged over the time interval to which the limit applies) x 3.785 (conversion factor).

4. Compliance with Toxic Substances Effluent Limitations:

   a. The discharger shall comply with the limits specified in Effluent Limitation B.5. of this Order, including the Monthly Average Interim Limit for PAHs, immediately upon adoption of this Order. The Monthly Average Interim Limit for PAHs shall apply until the next permit reissuance.

   b. Monitoring for PAHs shall be done using analytical methods which provide detection levels below those previously used. The objective is to obtain data with detection limits low enough to determine compliance with the (future) limit of 0.31 µg/L.

5. Compliance with Acute Toxicity Effluent Limitation:

   a. Compliance with Effluent Limitation B.6. (Whole Effluent Acute Toxicity) of this Order shall be evaluated by measuring survival of three spine stickleback exposed to undiluted effluent for 96 hours in flow-through bioassays.

   b. All bioassays shall be performed according to protocols approved by the USEPA or the California State Water Resources Control Board, or published by the American Society for Testing and Materials (ASTM) or American Public Health Association.

6. Wet Weather Flows and 85 % Removal for BOD_5 and TSS. In reviewing compliance with Effluent Limitiation B.4. of this Order, the Board will take into consideration difficulties encountered in achieving compliance during periods of extreme wet weather when ordinary treatment plant removal efficiencies are impeded by less concentrated influent resultant from stormwater dilution.

7. Wet Weather Overflows. In reviewing compliance with Discharge Prohibitions A.2 and A.3. of this Order, the Board will take into consideration the discharger's efforts to control wet weather overflows in accordance with the Basin Plan's strategy for control of wet weather overflows.

8. Wet Weather Flow Management Plan. The discharger is in the process of revising its Wet Weather Flow Management Plan (WWFMP). Revision will include updating of the discharger's WWFMP Final Report, December 1992. The discharger shall implement the recommendations of the revised WWFMP, including capital improvements as may be necessary, to address identified problems of excessive wet weather flows and overflows in the discharger's wastewater collection and treatment system caused by infiltration/ inflow. Upon completion of the revised WWFMP, a copy of the final report shall be submitted to the Board. The discharger shall submit to the Board, annually, a report discussing the status of the WWFMP and implementation of its recommendations.

9. Pretreatment Program.

   The discharger shall implement and enforce its approved pretreatment program in accordance with Board Order 89-179 and its amendments or revisions thereafter. The discharger's responsibilities include, but are not limited to:

   a. Enforcement of National Pretreatment Standards in accordance with 40 CFR 403.5 and Section 307(b) and (c) of the Clean Water Act.

   b. Implementation of the pretreatment program in accordance with legal authorities, policies, procedures and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the discharger's approved pretreatment program.

   c. Submission of reports to USEPA and the Board as described in Board Order 89-179 and its amendments or revisions thereafter.

10. Pollution Prevention Program.

   a. The discharger shall continue to participate in the Pollution Prevention Program (previously known as Waste Minimization Program) as described in Chapter IV of the Basin Plan under 'Waste Minimization' (September 1992 Basin Plan Amendments).

   b. The discharger shall continue to implement and expand its Pollution Prevention Program in order to reduce pollutant loadings to the treatment plant and, subsequently, to receiving waters.

   c. The discharger shall continue to submit to the Board reports, acceptable to the Executive Officer, as follows: Annual Report: by February 15, and
      Progress Report: by August 1, of each year.

      These reports should include the following:
      (1) Documentation of the discharger's efforts and progress;
      (2) Evaluation of the program's accomplishements; and
      (3) Identification of specific tasks and associated time schedules for future efforts.

11. Operations and Maintenance Manual. The discharger's Operations and Maintenance Manual shall be reviewed, and updated as necessary, annually, and within 90 days of completion of any significant facility or process changes. The discharger shall submit to the Board, annually, a report discussing the status of the O & M Manual review and update, including an estimated time schedule for completion of any revisions determined necessary, a description or copy of any completed revisions, or a statement that no revisions are needed.

12. Contingency Plan. The discharger's Contingency Plan, as required by Board Resolution 74-10 (attached), shall be reviewed, and updated as necessary, annually. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. The discharger shall submit to the Board, annually, a report discussing the status of the Contingency Plan review and update, including a description or copy of any completed revisions, or a statement that no changes are needed.

13. Wastewater Facilities Evaluation. The discharger shall regularly review and evaluate its wastewater collection, treatment and disposal facilities in order to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the discharger's service responsibilities. The discharger shall submit to the Board, annually, a report discussing the status of this review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions.

14. Annual Reports. Reports required to be submitted to the Board annually, as identified in Provisions E. 8, 11, 12, and 13 of this Order, shall be submitted to the Board by February 15 of each year.

    These reports may be submitted separately or as part of the Annual Self-Monitoring Report. Modification of report submittal due dates may be authorized, in writing, by the Executive Officer. A summary of reports to be submitted to the Board in accordance with this Order is included as Attachment C of this Order.

15. Self-Monitoring Program. The discharger shall comply with the Self-Monitoring Program for this Order (attached), as adopted by the Board and as may be amended by the Executive Officer.

16. Standard Provisions. The discharger shall comply with all applicable items of the "Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits " dated August 1993 (attached), or any amendments thereafter.

17. Change in Control or Ownership. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

    To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions, referenced above). The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Board and a statement. The statement shall comply with the signatory paragraph described in Standard Provisions and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

18. Reopener. The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order are causing or significantly contributing to adverse impacts on water quality and/or beneficial uses of the receiving waters.

19. Order Expiration. This Order expires on August 17, 1999. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days before this expiration date as application for reissuance of waste discharge requirements.

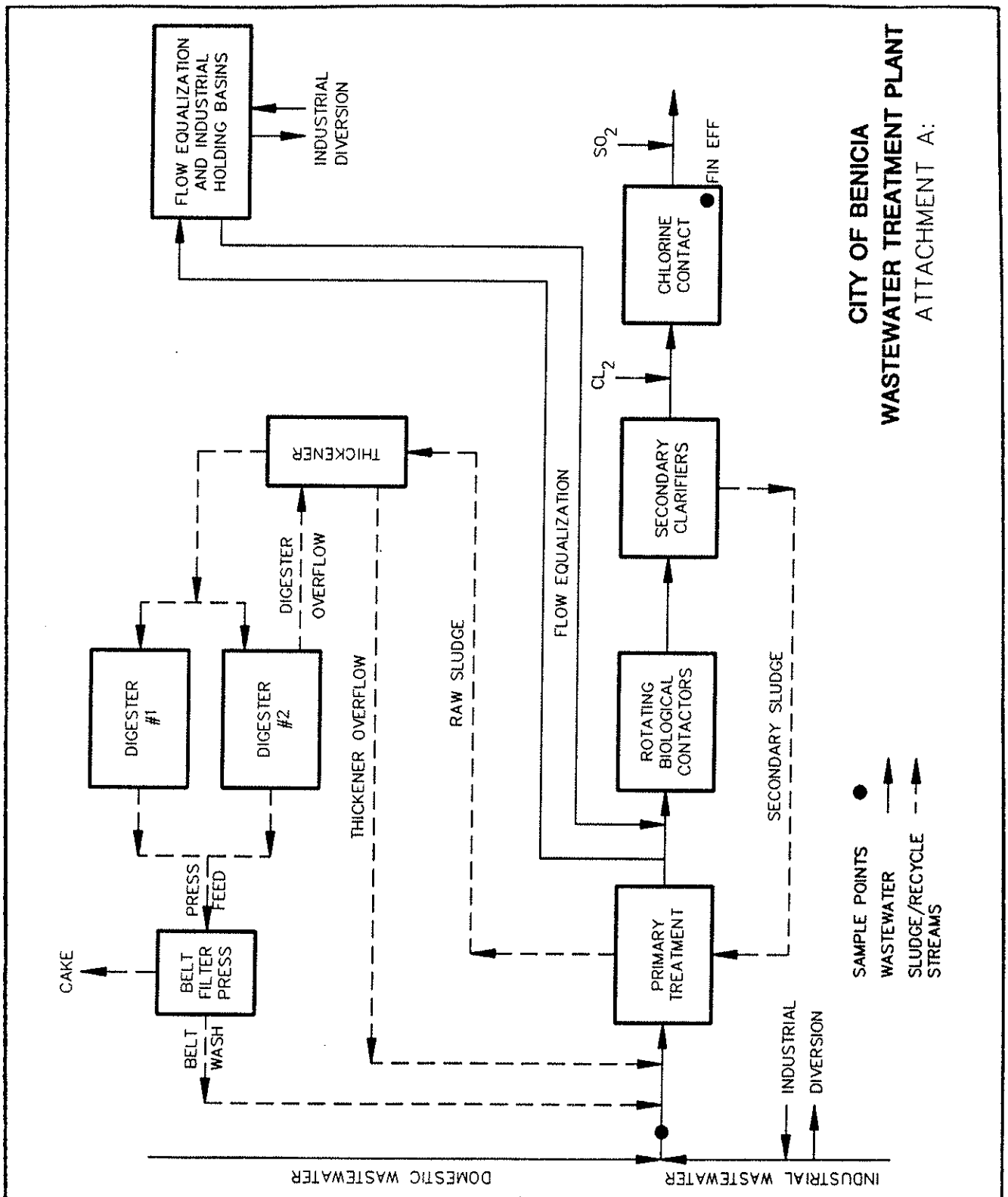
20. NPDES Permit. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, EPA, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

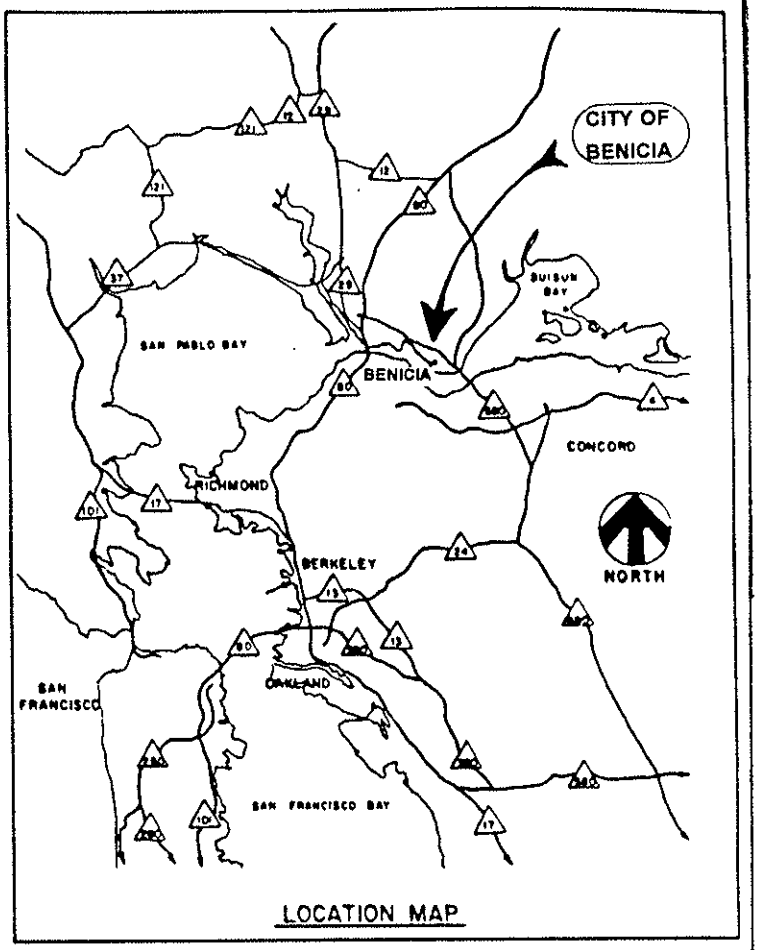
I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 17, 1994 .

STEVEN R. RITCHIE
Executive Officer

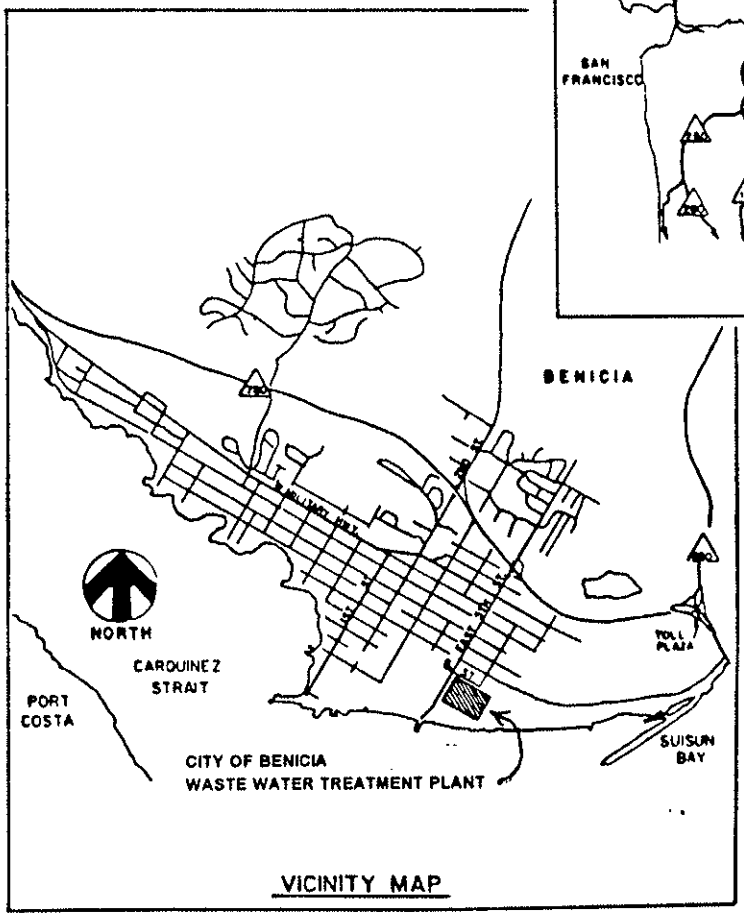
Attachments:

A. Treatment Process Schematic Diagram
B. Location Map
C. Summary of Reports to be Submitted to the Board
Self-Monitoring Program
Standard Provisions and Reporting Requirements, August 1993
Board Resolution No. 74-10


CITY OF BENICIA
WASTEWATER TREATMENT PLANT
ATTACHMENT A:
FLOW EQUALIZATION AND INDUSTRIAL HOLDING BASINS
INDUSTRIAL DIVERSION
SO_2
FIN EFF
CHLORINE CONTACT
CL_2
SECONDARY CLARIFIERS
THICKENER
FLOW EQUALIZATION
DIGESTER OVERFLOW
RAW SLUDGE
SECONDARY SLUDGE
DIGESTER #1
DIGESTER #2
ROTATING BIOLOGICAL CONTACTORS
THICKENER OVERFLOW
PRESS FEED
CAKE
BELT FILTER PRESS
PRIMARY TREATMENT
BELT WASH
INDUSTRIAL DIVERSION
SAMPLE POINTS
WASTEWATER
SLUDGE/RECYCLE STREAMS
DOMESTIC WASTEWATER
INDUSTRIAL WASTEWATER
STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
Attachment A:
Treatment Process Schematic Diagram
City of Benicia WWTP, Solano County
DRAWN BY:
DATE:
DRWG NO.



LOCATION MAP



VICINITY MAP

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Attachment B:

Location Map
City of Benicia WWTP, Solano County

DRAWN BY:	DATE:	DRWG NO.

ATTACHMENT C

SUMMARY OF REPORTS TO BE SUBMITTED TO THE BOARD

REPORT (Order Reference)	DUE DATE [1]	
Self-Monitoring Report, Monthly (SMP)	Last day of month following calendar month being reported	
Annual Monitoring Report (SMP)	February 15	
Wet Weather Flow Management Plan Update (E.8.)	February 15	[2]
Operations and Maintenance Manual Update (E.11.)	February 15	[2]
Contingency Plan Update (E.12)	February 15	[2]
Wastewater Facilities Evaluation Update (E.13.)	February 15	[2]
Pretreatment Program (E.9.)	As specified by Pretreatment Program requirements	
Pollution Prevention Program (E.10.)		
o Annual Report	February 15	
o Mid-Year Progress Report	August 1	

Notes:

[1] Modification of report schedule may be authorized by the Executive Officer (E.14.).

[2] May be submitted separately, or as part of the Annual Monitoring Report (E.14.).

SMP = Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CITY OF BENICIA WASTEWATER TREATMENT PLANT

CITY OF BENICIA

SOLANO COUNTY

NPDES PERMIT NO. CA0038091

ORDER NO. 94 - 094

CONSISTS OF

PART A
(Self-Monitoring Program, Part A, NPDES Permits; dated August 1993.)

AND

PART B

SELF-MONITORING PROGRAM
PART B

FOR
CITY OF BENICIA WASTEWATER TREATMENT PLANT

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
A-1	At any point in the treatment facilities headworks at which all waste tributary to the system is present, preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-1	At any point in the effluent from the treatment facilities at which point all waste tributary to the effluent is present, prior to the point of discharge. (May be the same as E-1-D)
E-1-D	At any point in the effluent from the treatment facilities at which point adequate contact with the disinfectant is assured.

C. RECEIVING WATERS

Station	Description
C-1	At a point on the pier located at the end of East 5th Street, Benicia, which extends into Carquinez Strait.

D. LAND OBSERVATIONS

Station	Description
P-1 through P-"n"	Located along the periphery of the wastewater treatment facility, at equidistant intervals of about 200 feet. (A sketch showing the locations of these stations shall be included in the Annual Report, and in the monthly report if stations change.)

E. OVERFLOWS AND BYPASSES

Station	Description
OV-1 through OV-"n"	At any points in the collection or waste treatment system including manholes, pump stations, or any other locations where overflows or bypasses occur.
	(A map showing the location(s) of each known bypass or overflow that occurred within the calendar year, and a summary of these occurrences shall be included in the Annual Report.)

II. SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATION

The schedule of sampling, analysis and observation shall be that given in Table 1.

III. REPORTING REQUIREMENTS

A. General Reporting Requirements are described in Section E of the Board's "Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits", dated August 1993.

B. A Self-Monitoring Report shall be submitted for each calendar month. The report shall be submitted to the Board by the last day of the following month. The required contents of these reports are described in Section F.4. of Part A.

C. An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by February 15 of the following year. The required contents of these reports are described in Section F.5. of Part A.

D. Any overflow, bypass or significant non-compliance incident that may endanger health or the environment shall be reported in accordance with Sections F.1 and F.2 of Part A, and any additional reporting guidance as may be provided by Board staff. The date, time, duration, location, estimated volume of wastewater discharged, and corrective actions taken for these events shall be reported in the monthly Self-Monitoring Reports.

IV. MODIFICATION OF PART A (August 1993)

A. This monitoring program does not include the following sections of Part A:

C.2.d.; C.2.f.; C.4.; C.5.; D.4.; and E.3.

B. This monitoring program includes the following modifications of Part A:

1. Section F.4., Self-Monitoring Reports: The first sentence is revised to read:

'The discharger shall submit to the Board a Self-Monitoring Report for each calendar month, to be received no later than the last day of the following month.'

2. Section F.5., Annual Reporting: The first sentence is revised to read:

'The discharger shall submit to the Board an Annual Report for each calendar year, to be received no later than February 15 of the following year.'

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. 94 - 094.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

3. Is effective as of August 17, 1994.

STEVEN R. RITCHIE
Executive Officer

Attachment: Table 1

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS [1]

Sampling Station:	A		E-1			E-1-D		OV	P	C
Type of Sample: / **Parameter** (units) [notes]	C-24	Co	G	C-24	Co	C-24	G	O	O	O
Flow Rate (mgd) [2]		D			D					
BOD_5 (mg/L & kg/d)	3/W			3/W						
TSS (mg/L & kg/d)	3/W			3/W						
Oil & Grease (mg/L & kg/d) [3]				2/M						
Settleable Matter (ml/L-hr)			3/W							
Chlorine Residual (mg/L) [4]							Co/2h			
Total Coliform (MPN/100 ml)							3/W			
Acute Toxicity (% Surv.)						M				
pH (units)			W							
Temperature (° C)			W							
D.O. (mg/L & % Sat)			W							
Arsenic (µg/L & kg/d)				Q						
Cadmium (µg/L & kg/d)				Q						
Chromium IV (µg/L & kg/d)				Q						
Copper (µg/L & kg/d)				Q						
Cyanide (µg/L & kg/d)				Q						
Silver (µg/L & kg/d)				Q						
Lead (µg/L & kg/d)				Q						
Mercury (µg/L & kg/d)				Q						
Nickel (µg/L & kg/d)				Q						
Selenium (µg/L & kg/d)				Q						
Zinc (µg/L & kg/d)				Q						
Phenols (µg/L & kg/d)				Q						
PAHs (µg/L & kg/d)				Q						
Applicable Stnd. Observations								E	M	M

LEGEND FOR TABLE 1:

Types of Stations:

A	=	treatment facility influent
E	=	treatment facility effluent
OV	=	overflow and bypass points
P	=	treatment facility perimeter
C	=	receiving water

Types of Samples:

C-24	=	composite sample, 24 hours
Co	=	continuous sampling
G	=	grab sample
O	=	observation

Frequency of Sampling:

D	=	once each day
W	=	once each week
M	=	once each month
2/M	=	twice each month (with at least two week intervals)
Q	=	once each calendar quarter (with at least two month intervals)
E	=	each occurrence
3/W	=	three times each week (on separate days)
Co/2h	=	continuous or every two hours

FOOTNOTES FOR TABLE 1

[1] FLOW MONITORING.
Flows shall be measured continuously, and recorded and reported Daily.
For effluent flows, the following information shall also be reported, monthly:
Average Daily Flow (mgd)
Maximum Daily Flow (mgd)
Minimum Daily Flow (mgd)

[2] BYPASS MONITORING
During any time when bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facilities, the self-monitoring program shall include the following sampling and analyses in addition to the Table 1 schedule:

a. When bypassing occurs from any primary or secondary treatment unit(s), composite samples on an hourly basis for the duration of the bypass event for BOD and TSS analyses, grab samples at least daily for Settleable Matter and Oil and Grease analyses; and continuous monitoring of flow.

b. When bypassing the chlorination process, grab samples at least daily for Total Coliform analyses; and continuous monitoring of flow.

c. When bypassing the dechlorination process, grab samples hourly for chlorine residual; and continuous monitoring of flow.

[3] Each Oil and Grease sample shall consist of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantateous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[4] Chlorine residual concentrations shall be reported for samples taken prior to and following dechlorination. Chlorine dosage shall be recorded on a daily basis, but does not need to be reported in the monthly self-monitoring reports.